TECHNICAL FIRE MANAGEMENT ENTRANCE EXAMINATION

Name: _____

Agency: _____ **Unit:** _____

PREREQUISITES

1. I use a laptop personal computer:

    a. daily   b. frequently   c. occasionally   d. never

2. My knowledge of the Windows operating system is:

    a. expert   b. working   c. get by   d. weak

3. I use Microsoft Office - Word:

    a. daily   b. frequently   c. occasionally   d. never

4. I use Microsoft Office - Excel:

    a. daily   b. frequently   c. occasionally   d. never

5. I use Microsoft Office - PowerPoint:

    a. daily   b. frequently   c. occasionally   d. never

6. I have attended (circle highest level):

    a. S-290   b. S-390   c. S-490   d. S-590

7. I have completed (circle the highest grade):

    9   10   11   12   13   14   15   16   17   18   19   20   21

8. I have the following diplomas:

    a. GED   b. High school   c. AA or AS   d. BA or BS   e. MS   f. MA   g. PhD

MATHEMATICS AND STATISTICS

Lightning Fire Occurrence	
Year	Fires
1	55
2	49
3	43
4	26
5	20

9. Given the data table, the median value is:
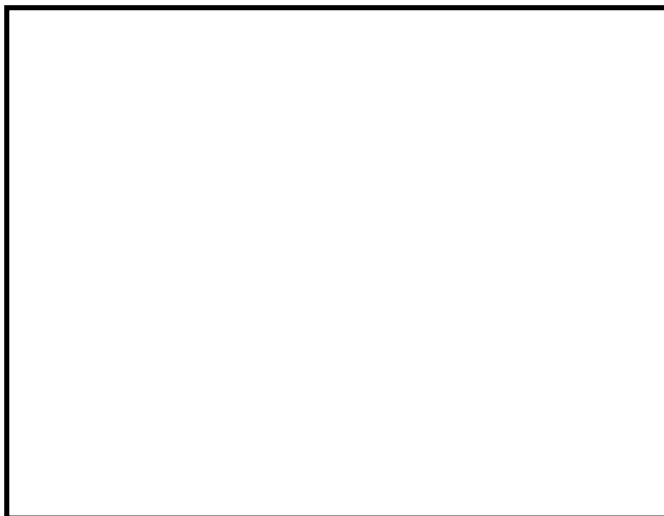
      a. 51.40   b. 43.00   c. 38.60   d. 28.00

10. Given the data table the mean value is:

      a. 51.40   b. 43.00   c. 38.60   d. 28.00

11. Given the data table the range of the data is:

      _____

12. Draw a histogram of the data in the table (year is the independent variable):

13. Interpret the following expressions (in words):

    a. $A = B$

    b. $X \neq Y$

    c. $M > N$

    d. $Z <= Q$

14. In the fraction, 2/3, the 2 is the _____

15. In the fraction, 2/3, the 3 is the _____

16. The reciprocal of 4 is _____

17. In the expression 2^4, 2 is called the base and the 4 is called the _____

18. What is the value of the expression in 17 above _____

19. Evaluate the following radicals:

    a. $\sqrt{9}$

    b. $-\sqrt{25}$

    c. $\sqrt[3]{27}$

20. What is the decimal equivalent of 7/8: _____

21. Calculate the percent moisture of a sample of duff that weights 40 grams when collected and 35 grams when completely dry? _____

22. Evaluate the following:

    5 1/5 x 7 2/3 = _____

    1/2 x 2 x 1/3 = _____

23. Convert 238, 500 to scientific notation: _____

24. Evaluate the following:

$(1.5)^5$ _____

$(2.5000)^3$

25. Solve the following equation for x:

$y = 2x + 3$

26. What is the independent variable in the equation presented in No. 25? _____

27. To what power must the base 10 be raised to obtain 100? _____

28. Evaluate e^2 _____

29. Evaluate e^0 _____

30. Change $\log_{10} = 4$ to exponential form: _____

31. Find $\log_{10} 185$ _____

32. Evaluate $\ln 35.74$ _____

33. Name the following symbols:

β   δ

ε   μ

π   Σ

FIRE MANAGEMENT

34. A fire moving at the rate of 16 chains per hour along a 500 yard front will burn over how many acres in 35 minutes (assume a line of fire that burns as a rectangle): _____

35. A helitorch can be obtained under contract for $750 move-in costs (one time) plus $10 per acre for operations. What would the total per acre cost of helicopter ignition if units of 46, 18, and 61 acres were burned from the same set up? _____

36. Using any release of BEHAVE for Fuel Model 3, calculate rate of spread, flame length, and heat per unit area for a dead fuel moisture of 6%, midflame windspeed of 4 mph, no slope, and a live fuel moisture of 70%: _____

37. What is NEPA designed to do:

     a. analyze projects
     b. track costs of fire operations
     c. disclose effects of proposed government actions
     d. provide administrative review of government decisions

End-